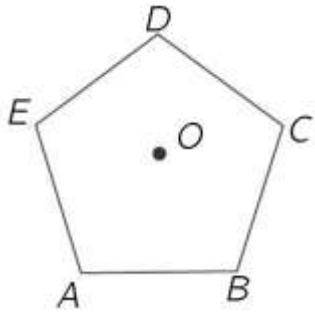


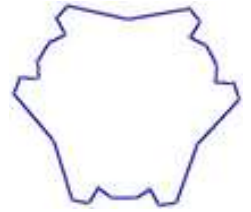
CO-A3a

Transformations Practice

1. What is the minimum number of degrees of counterclockwise rotation about point O required to carry point E onto point C on the regular pentagon below?



2. Mark all lines of reflection which would carry the figure onto itself.



3. Draw a quadrilateral below with exactly 2 lines of reflectional symmetry.

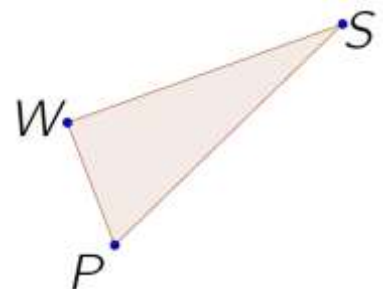
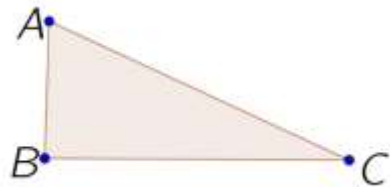
CO-A4

For #4-5, rate each statement as either always, sometimes, or never true. Explain your reasoning.

4. (Always/Sometimes/Never) A translation along a vector will carry a figure onto itself.
5. (Always/Sometimes/Never) After a reflection, each point of a figure moves by the same amount as any other.
6. $\triangle ABC$ [not shown] is rotated 30° clockwise about point B . Which points of the figure will be moved?

CO-B6a

7. Describe in detail a sequence of rigid motions that would carry $\triangle ABC$ onto $\triangle PWS$.
[Hint: be sure to give what line you reflect over, what vector you translate along, and what point you rotate around and direction]



(CO-B6a continued)

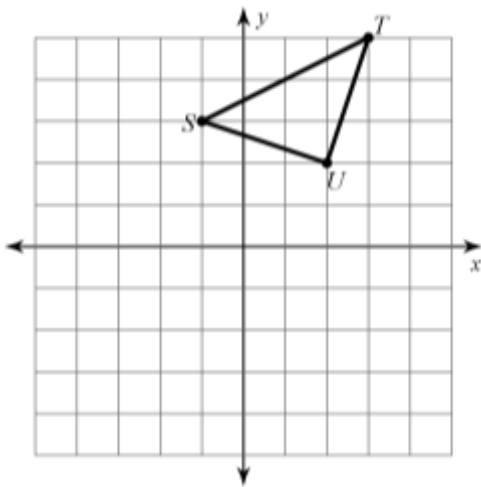
Consider $\triangle ABC$ on the coordinate plane. It first undergoes the transformation $(x, y) \rightarrow (x - 3, y - 2)$ to create $\triangle A'B'C'$. Then, $\triangle A'B'C'$ undergoes the transformation $(x, y) \rightarrow (-x, -y)$ to create $\triangle A''B''C''$.

8. Describe in detail what each transformation does.

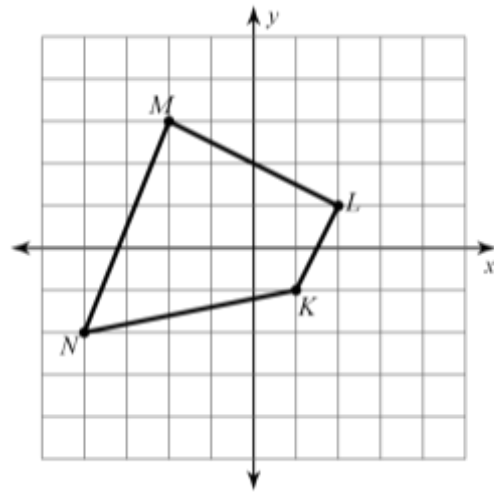
9. If $\triangle ABC$ exists wholly within the third quadrant, in which quadrant will $\triangle A''B''C''$ be plotted?

CO-A2a

10. Rotate $\triangle STU$ 90° counterclockwise about the origin. Label with primes.



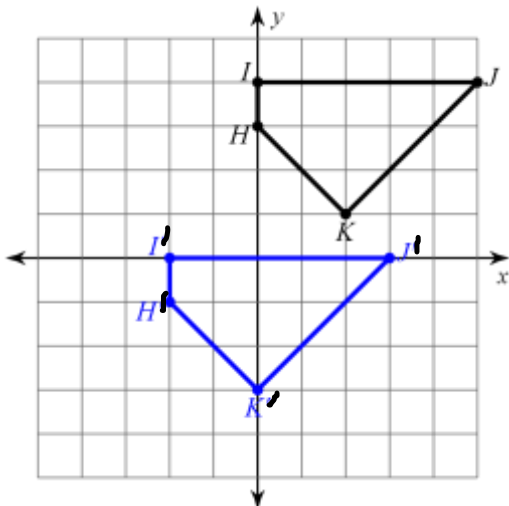
11. Reflect the figure across the y-axis. Label with primes.



CO-A5a

Identify each as a rotation, translation, or reflection. Then give either the line of reflection, angle/direction of rotation about the origin, or arrow notation rule for translation.

12.



13.

